

ILLINOIS

under the Direction of

BREVET LIEUT. COL. J. D. CRAHAM, MAJOR.

U. S. TOP ENGINEERS.

Superintending Engineer of Lake Harbor Works

Referred to in the Bond of the Chicago Dock and Canal Company, to the United States, and the articles of agreement thereto attached, dated November 11th 1858.



J. Graham, Major Top^e Engineers.
Bvt. Lieut. Colonel, Superintending Engineer, &c. &c.



Watson D. Cyden, President of Chicago
Book and Canal Company.

Franklin Hathaway, Secretary of
Chicago Dock and Canal Company

Lith. of J. Bien, 180 Broadway, N. Y.

NOTE 1st

The Longitude of the temporary Observatory of May 1852 in the yard of the University of St. Mary of the Lake, between Superior Street and Chicago Avenue, and between Wolcott and Cass Streets was determined as follow, viz.:

Longitude of the Centre of the Quebec Citadel, taken as the primary meridian, determined by Lieut. Colonel J. D. Graham in the year 1842. West of Greenwich..... 71° 12' 24"

Add, difference of longitude between the Centre of the Quebec Citadel and Lieut Colonel J. D. Graham's temporary Observatory situated as above described, at Chicago, determined from electric Signals, transmitted along the telegraph Wires by Lieut Colonel Graham U.S. Top. Engineers, and Lieut.

Lieut. Colonel Graham U.S. Top. Engineers, and Lieut.
E. D. Ashe R. N. in May 1857 $16^{\circ} 25' 20''$
Longitude of Colonel Graham's temporary Observat.
in the yard of the "University of St. Mary of the
Lake," at Chicago West of Greenwich $87^{\circ} 37' 44''$

Latitude of this temporary Observatory in the yard
of the said University, as determined by astronomical
Observations made by Lieut Colonel J. D. Graham, in
August and September 1858

August and September 1853	41° 53' 50" 3.
Magnetic variation at the Same point as observed	
by L ^t Col. J. D. Graham, on the 23 ^d of July 1857	
East of North	5° 46' 07" 5.

NOTE 2^d

From the above, we obtained, by triangulation: the Latitude and Longitude of the following positions in the City of Chicago, viz:

<i>Stations</i>	<i>North Latitude.</i>	<i>Longitude East of Greenwich.</i>
1 Front door (Steeple) of the Roman Catholic Church of the Most Sacred Heart, St. James, on Belfast Street, between Burns and Superior Streets.	47° 53'. 46"	87° 37'. 47"
2 Front door (Steeple) of the Episcopal Church of St. James on Cass Street, S. E. Cor. of Huron Street.	47° 52'. 457"	87° 37'. 43"
3 Dome of the Chicago City Hall, or Court House.	47° 52'. 067"	87° 38'. 017"
4 Position formerly occupied by the First Lighthouse, Flag Staff.	47° 52'. 227"	87° 37'. 347"
5 Centre of the Base of the New from Light House on the West extremity of the North Harbor Pier.	47° 53'. 247"	87° 36'. 597"
6 Intersection of centre of North Clark, and Michigan Streets.	47° 53'. 287"	87° 37'. 597"
7 Toll Chimes of the Illinois Cent. Rail Road Company's Machine Shop on the Lake Shore, between Twelfth & Fifteenth Streets.	47° 51'. 507"	87° 37'. 297"
8 Intersection of the Centres of South Clark, and Fifth Streets.	47° 52'. 297"	87° 37'. 377"
9 Steeple of the First Market, at the Intersection of the Centres of Randolph Street, with the West Side of Des Plaines Street.	47° 52'. 097"	87° 38'. 677"
10 Old Light House, near River Street.	47° 52'. 227"	87° 37'. 307"

NOTE 3^a

The Soundings are in Feet and tenths of a Foot. They are reduced to the plane of 4 feet on the Tide Gauge, this being the average height of the Surface of the Lake Michigan in the year 1858. It is 1.8 foot higher than the plane of reference for the Soundings in Maps G. Nos. 11 22 22 and 23, and 1.7 foot higher than the plane of reference for the Soundings on Maps G. Nos. 38 43 44 and 52.

The Keeper Chimney is the tall Chimney of the Reaper Factory. With due attention this Chimney cannot be mistaken for any other.

The Sailing directions for entering the Harbor are sufficiently indicated by the lines given on the Maps.

NOTE 4th

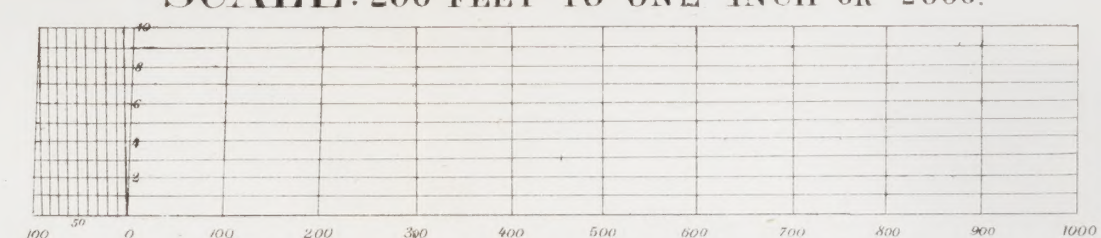
The *Azimuths* of the trigonometrical Sites are derived, by means of the theodolite, from the true Meridian, as determined Astronomically by Lieut. Colonel J. D. Graham, in May 1857.

The Azimuths begin at the South point as zero (0) and are reckoned round by the West, North and East to the South again, viz:

East to the South again, viz:
The Azimuth of due South is 0°
ditto of due West is 90°
ditto of due North is 180°
ditto of due East is 270°

NOTE 6²

In consequence of the increased height of the Lake surface at this time (September 2, 1858) the curve of 14 f^t. depth, marking the outline of the Bar, occupies very nearly the same position as the curve of 12 feet depth which marked its outline on Maps G. N^o 11, 12, 22, 23, 38, 43, 44 and 52.

SCALE: 200 FEET TO ONE INCH OR $\frac{1}{2000}$ 

NOTE 5.		
<i>The Azimuth of Michigan Avenue between Washington St. and River St.</i>		179° 03' 23"
<i>do do of Clark St. between Chicago River and Polk St.</i>		158° 56' 46"
<i>do do of Randolph St. between S. Clark St. and Desplaines St.</i>		89° 52' 10"
<i>do do of Washington St. between Michigan Av. and S. Clark St.</i>		90° 12' 40"
<i>do do of Wabash St. between Kinzie St. and Chicago Avenue</i>		178° 47' 10"
<i>do do of North Clark St. between Chicago River and Chicago Av.</i>		179° 08' 00"
<i>do do of Michigan St. between Rush St. and Worth Clark St.</i>		88° 47' 50"

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map6f G4104.C6:2C5 1858 U5 (Prct)